

What is claimed is:

1           1.    In a method for manufacturing an ink jet recording head  
2 provided with a pressure generating chamber, wherein the pressure  
3 generating chamber is constructed of a first plate, a second plate  
4 and a third plate, wherein the first plate is provided with a  
5 through-hole and sandwiched between the second plate and the third  
6 plate, the method comprising a step of forming said through-hole  
7 in said first plate, the improvement which comprises, in said step,  
8 the sub-steps of:

9           forming a first resist film and a second resist film on a first  
10 and a second surface of said first plate, respectively, wherein  
11 said first resist film and said second resist film assume  
12 substantially a same shape, but are different in length from each  
13 other when measured in a direction parallel to a flow direction  
14 of ink; and

15           forming said through-hole in said first plate by etching  
16 both said first and said second surface of said first plate with  
17 the use of said first resist film and said second resist film both  
18 of which serve as masks in said etching processing of said first  
19 plate.

1           2.    The method for manufacturing the ink jet recording head  
2 provided with the pressure generating chamber according to claim  
3 1, wherein:

4           a thickness of said first plate is approximately  $140\mu\text{m}$ ; and  
5           a difference in length between said first resist film and said  
6 second resist film is within a range of from approximately 80 to  
7 approximately  $140\mu\text{m}$ .

1           3.    In a method for manufacturing an ink jet recording head  
2 provided with a pressure generating chamber, wherein the pressure  
3 generating chamber is constructed of a first plate, a second plate  
4 and a third plate, wherein the first plate is provided with a  
5 through-hole and sandwiched between the second plate and the third  
6 plate, wherein one of said second plate and said third plate is  
7 provided with an ink outlet passage in its ink discharge side, the  
8 method comprising a step of forming said ink outlet passage in said  
9 ink discharge side of said one of said second plate and said third  
10 plate, the improvement which comprises, in said step, the sub-  
11 steps of:

12               forming a first resist film and a second resist film on a first  
13 and a second surface of said first plate, respectively, wherein  
14 said first resist film and said second resist film assume  
15 substantially a same shape, but are offset from each other in a  
16 direction parallel to a flow direction of ink; and

17               forming said through-hole in said first plate by etching  
18 both said first and said second surface of said first plate with  
19 the use of said first resist film and said second resist film both  
20 of which serve as masks in said etching processing of said first  
21 plate.

1           4.    The method for manufacturing the ink jet recording head  
2 provided with the pressure generating chamber according to claim  
3 3, wherein:

4               a thickness of said first plate is approximately  $140\mu\text{m}$ ; and  
5               said first resist film and said second resist film are offset  
6 from each other by a value ranging from approximately 40 to  
7 approximately  $70\mu\text{m}$ .

1           5.    In an ink jet recording head provided with a pressure  
2   generating chamber, wherein the pressure generating chamber is  
3   constructed of a first plate, a second plate and a third plate,  
4   wherein the first plate is provided with a through-hole and  
5   sandwiched between the second plate and the third plate, the  
6   improvement wherein:

7                said through-hole is formed in said first plate by  
8   etching both a first and a second surface of said first plate, and  
9   therefore constructed of a first hole portion and a second hole  
10   portion thus formed through said etching processing, wherein said  
11   first hole portion and said second hole portion assume  
12   substantially the same shape, but are different in length from each  
13   other when measured in a direction parallel to a flow direction  
14   of ink within said pressure generating chamber.

1           6.    In an ink jet recording head provided with a pressure  
2   generating chamber, wherein the pressure generating chamber is  
3   constructed of a first plate, a second plate and a third plate,  
4   wherein the first plate is provided with a through-hole and  
5   sandwiched between the second plate and the third plate, wherein  
6   one of said second plate and said third plate is provided with an  
7   ink outlet passage in its ink discharge side, the improvement  
8   wherein:

9                said ink outlet passage is formed in said third plate  
10   by etching both a first and a second surface of said third plate,  
11   wherein said ink outlet passage is constructed of a first passage  
12   portion and a second passage portion each assuming a substantially  
13   semispherical shape, wherein said first passage portion and said  
14   second passage portion are offset from each other in a direction

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